

binarizing means for generating binarized data from an image signal corresponding to an image of the dot code read by said code reading means; and

information reproducing means for restoring binarized data generated by said binarizing means to [original] the multimedia information and to reproduce the multimedia information, wherein

said binarizing means includes:

① [region] image dividing means for dividing the [picked up screen] image of the dot code into a plurality of regions;

characteristic [amount] value extracting means for extracting [the] a characteristic [amount] value for binarization in [region units divided by said region dividing means] each of said plurality of regions;

threshold value calculating means for calculating [the] a threshold value for binarization in accordance with the characteristic [amount] value extracted by said characteristic

[amount] value extracting means; and

said binarizing means binarizing the image signal corresponding to the image of the dot code based on [threshold value determining means for binarizing the image signal with] the threshold value calculated by said threshold value calculating means.

6 26. (Twice Amended) An information reproducing system
according to claim 21, wherein

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said characteristic [amount] value extracting means extracts
[the] a maximum value of [the] a luminance of each of the
5 [divided] plurality of regions as a first characteristic [amount]
value and extracts [the] a minimum value of [the] a luminance [of
the overall screen] as a second characteristic [amount] value,
and

10 said threshold value calculating means calculates the
threshold value [for each region] from the maximum value and the
minimum value of the luminance in accordance with a predetermined
interior division ratio.

9 28. (Twice Amended) An information reproducing system
comprising:

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code reading means for reading a [desired] dot code from
an information recording medium on which multimedia
5 information including at least any one of audio information,
image information and digital code data has been recorded in the
form of a dot code which can optically be read;

10 binarizing means for generating binarized data from an image
signal corresponding to [the] an image of the dot code read by
said code reading means; and

information reproducing means for restoring binarized data generated by said binarizing means to [original] the multimedia information and to reproduce the multimedia information, wherein

said binarizing means includes:

15 peak value detection means for detecting [the] a maximum value and [the] a minimum value of [the] a luminance from a predetermined detection region;

DB code detection means for detecting whether or not a code exists in said predetermined detection region;

20 minimum value replacing means for replacing the minimum value in the predetermined detection region with the minimum value of one of the previous field and frame [in a case where] when said code detection means does not detect a code; and

threshold value calculating means for calculating [the] a
25 threshold value for binarization for the [same] predetermined detection region of one of a next field and a next frame from the detected maximum value and the detected or replaced minimum value in accordance with a predetermined interior division ratio.

31. (Amended) An information reproducing system comprising:

code reading means for reading a [desired] dot code from an information recording medium on which multimedia information
5 including at least any one of audio information, image

information and digital code data has been recorded in the form of a dot code which can optically be read;

binarizing means for generating binarized data from an image signal corresponding to an image of the dot code read by said

10 code reading means; and

information reproducing means for restoring binarized data generated by said binarizing means to [original] the multimedia information and to reproduce the multimedia information, wherein

said binarizing means includes:

15 peak value detection means for detecting [the] a maximum value and [the] a minimum value of [the] a luminance from a predetermined detection region;

DH code detection means for detecting whether or not a code exists in said predetermined detection region;

20 minimum value replacing means for replacing the minimum value in the predetermined detection region with the minimum value of the adjacent detection region [in a case where] when said code detection means does not detect a code; and

25 threshold value calculating means for calculating [the] a threshold value for binarization for [the same] a predetermined detection region of one of a next field and a next frame from the detected maximum value and the detected or replaced minimum value in accordance with a predetermined interior division ratio.

13 36. (Amended) An information recording medium for use in
an information reproducing system having code reading means for
reading a [desired] dot code from an information recording medium
on which multimedia information including at least any one of
5 audio information, image information and digital code data has
been recorded in the form of a dot code which can optically be
read;

binarizing means for generating binarized data from an image
signal corresponding to an image of the dot code read by said
10 code reading means; and information reproducing means for
restoring binarized data generated by said binarizing means to
[original] the multimedia information and to reproduce the
multimedia information, said information recording medium
comprising:

15 data dots which correspond to the contents of multimedia
information and which can optically be read; and

a reference dot serving as a reference when said binarizing
means detects [the] a maximum value and [the] a minimum value of
[the] an image signal level corresponding to the dot code,
20 detects a dot from a code data binarized [by] based on a
threshold value calculated from the maximum [vale] value and the
minimum value in accordance with a predetermined interior
division ratio and modifies the interior division ratio in such
a manner that an area of the detected dot approaches a
predetermined target value.

15 38. (Amended) An information recording medium according to
claim 36^B wherein said information recording medium has a
reference [region] area for use when said binarizing means
[extracts the characteristic amount for binarization] detects
said maximum and minimum values of an image signal level.

17 40. (Twice Amended) An information recording apparatus for
recording multimedia information including at least any one of
audio information, image information and digital code data in the
form of a dot code which can optically be read, comprising:

5 reference dot recording means for recording at least two
types of reference dots having at least different areas [of] or
shapes;

reference dot reading means for reading the reference dots
recorded by said reference dot recording means [to binarize] by
10 binarizing the read reference dots;

reference dot selection means for [subjecting the area of
each] selecting a reference dot such that a difference between an
area of each reference dot read by said reference dot reading
means and a predetermined [reference] target value [to a
15 comparison to select a reference dot having the different] become
smaller than a predetermined [threshold] value; and

recording means for recording a dot code corresponding to
the multimedia information in accordance with the reference dot
selected by said reference dot selection means.

19 42. (Twice Amended) An information recording apparatus for recording multimedia information including at least any one of audio information, image information and digital code data in the form of a dot code which can optically be read, comprising:

5 reference dot recording means for recording reference dots having different recording densities;

DA reference dot reading means for reading the reference dots recorded by said reference dot recording means [to binarize] by binarizing the read reference dots;

10 recording density adjustment means for [subjecting the] adjusting a recording density such that a difference between an area of each of the reference dots read by said reference dot reading means and a predetermined [reference] target value [to a comparison to adjust the recording density in such a manner that

15 the difference is] becomes smaller than a predetermined [threshold] value; and

recording means for recording a dot code corresponding to the multimedia information in accordance with the recording density adjusted by said recording density adjustment means.

20/43. (Twice Amended) An information recording apparatus for recording multimedia information including at least any one of audio information, image information and digital code data in the form of a dot code which can optically be read, comprising:

5 reference dot recording means for recording at least two [or more] types of reference dots having different recording densities;

reference dot reading means for dividing a picked up [screen] image in such a manner that only one reference dot recorded by said reference dot recording means is included in a divided image region and binarizing each divided image region to read the reference dot [to binarize the reference dot];

10 [density selection means for subjecting the] recording density selection means for selecting a recording density such that a difference between an area of each reference dot read by said reference dot reading means and a predetermined [reference] target value [to a comparison and for selecting the density of the reference dot having the difference] becomes smaller than a predetermined [threshold] value; and

20 recording means for recording a dot code corresponding to the multimedia information in accordance with the recording density selected by said density selection means.